

Large-Scale Demonstration and Deployment Project (LSDDP)

Fact Sheet

Los Alamos National Laboratory Transuranic (TRU) Waste

In Partnership with The Office of Science and Technology (EM-50)

Introduction

The LANL TRU LSDDP reflects the cooperative interest of industry, government, and academia to bring collaborative expertise and strength to DOE's TRU decontamination and decommissioning (D&D) program at LANL and elsewhere within the Department of Energy (DOE) complex. LANL currently has 1,500 m³ of TRU waste in inventory, stores 313 plutonium-contaminated gloveboxes in a 24,000 ft² facility, and expects to generate another 2,500 m³ from ongoing operations in coming years.

Objective

The objective of the LANL TRU LSDDP to address the characterization, decontamination and volume reduction of oversized metallic transuranically contaminated waste currently in storage at the LANL storage and disposal area, TA-54. The Los Alamos LSDDP reflects the cooperative interest of industry, government and academia to bring collaborative expertise and

strength to DOE's TRU decontamination and decommissioning program at LANL and elsewhere within the DOE complex. The LSDDP provides a unique opportunity to compare these innovative technologies alongside the baseline technologies. It also provides an opportunity to immediately deploy technologies that demonstrate advantages over baseline technologies.



Technology Demonstrations

Mega-Tech Blade Plunging Cutter: The Blade Plunging Cutter (BPC-4) is a portable hydraulic

power cutting tool. It has a 4" blade and is a piston-forced plunging cutter that operates through a recess in the anvil, severing the metal in

a guillotine fashion during the 8 second stroke. The demonstration showed that



the BPC-4 effectively removes legs and appurtenances from large metal objects, such as gloveboxes, at a higher productivity and equivalent cost than the baseline technology, a variable speed reciprocating saw.

NT Vision: The NT Vision System was demonstrated to make video recordings of low-level radioactive waste (LLW) materials being placed into containers. The NT Vision System provided permanent documentation of the materials placed in the containers. As a result of the successful demonstration, LANL plans to deploy the NT Vision System to provide permanent documentation on the contents of its TRU and LLW containers.

RACESCAN: The RaceScan Communications System is used to communicate among workers that are excavating fiberglass-reinforced crates containing plutonium-contaminated gloveboxes. The full-face respirators worn by the workers and the heavy excavating equipment make communication difficult during excavation and hand signals are typically used for workers to communicate with each other. RaceScan is an in-ear communications system used by the automobile racing industry for drivers and pit crews to communicate with each other.

AeroGo Air Pallets: The AeroGo, Inc., air pallet



system includes air casters, an air hose, and a



pressure manifold distribution control box to "float" loads on a virtually frictionless film of air. The reduced friction and omni-directional movement allow the operator to precisely place and align the load in a limited workspace. The LANL Integrating Contractor Team demonstrated the AeroGo air-caster system by moving fiberglass-reinforced packages and standard waste boxes. The demonstration took place in June 1999 at the LANL Solid Waste Operations Area, Technical Area 54, Area G. Packages weighing up to 5600 pounds were moved and positioned in a non-destructive assay system, as well as moved through a maze to demonstrate system flexibility.

Vehicle and Cargo Inspection System (VACIS):
The vehicle and cargo inspection system (VACIS)



with its highly penetrating gamma ray imaging system provides a means to non-invasively image a crate's contents prior to crate disassembly. The VACIS™ mobile unit provided quality images of the crate and waste container contents in which items such as gloveboxes, equipment, debris and equipment inside gloveboxes, and filter media were clearly visible.

Fog and Strip: The fog and strip technology consists of applying a fog spray to fix airborne radioactive contamination onto surfaces followed by application of a strippable coating to remove the contamination.

<http://www-emtd.lanl.gov/LSDDP/DDtech.html>

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